CLAIMS

What is claimed is:

1. A digital telephone system for processing a plurality of information signals received in parallel over telephone lines from a public network exchange which are then transmitted in parallel over a plurality of radio frequency (RF) channels to a plurality of mobile subscriber units, each capable of receiving on any of those RF channels, comprising:

an exchange switch handling the information signals received from said telephone lines as digital signal samples;

signal compressors compressing the digital signal samples received from the exchange switch and providing a corresponding compressed signal for each information signal;

a multiplexer connected to the signal compressors sequentially combining a number of compressed signals into a single transmit channel bit stream corresponding to one of said RF channels, with each of the compressed signals occupying a sequential slot position in the transmit channel bit stream;

a transmitter outputting a transmit channel signal for transmission to subscriber units over said one RF channel in response to the transmit channel bit stream, wherein the transmitter is capable of transmitting on any one among a plurality of RF channels available in the system, said one being selectively assignable within the system;

said exchange switch connecting each received information signal to a respective compressor; and

a remote-connection central processing unit responsive to a received connection request signal by providing an assignment signal indicating which one of the slots and RF channels is to be used for the respective information signal, wherein the central processing unit maintains a memory of which slots and which RF channels are so assigned and consults said memory upon receipt of the connection request signal and then provides the assignment signal that establishes the utilization of one of the slots at one of the RF channels that is not assigned to another information signal, and wherein the central processing unit

communicates through said transmitter a control signal representative of the assigned time slot and RF channel to the subscriber unit to which the communication request is addressed.

2. A digital telephone system as claimed in claim 1, wherein the slots in the transmit channel bit stream are combinable into system frames optionally of equal or varying slot length.

3. A digital telephone system for processing a plurality of information signals received in parallel over telephone lines from a public network exchange which are then transmitted in parallel over radio frequency (RF) channels to a plurality of mobile subscriber units, each capable of receiving on any of the RF channels, comprising:

an exchange switch handling the information signals received over the telephone lines as digital signal samples;

a plurality of transmit channel circuits each of which operates at an assigned one of the RF channels and each of which utilizes signal compressors compressing the digital signal samples respectively received from the exchange switch to provide a number of separate compressed signals, a multiplexer connecting the compressors for sequentially combining the compressed signals into a single transmit channel bit stream for each RF channel, with each of the compressed signals occupying a sequential slot position in the transmit channel bit stream, a modulator generating a modulated subcarrier signal in response to the transmit channel bit stream and a transmitter outputting a main carrier signal modulated with the subcarrier signal for transmission to subscriber units over the assigned RF channel, the exchange switch connecting the received information signals to the respective compressor; and

a remote-connection central processing unit responsive to a received connection request signal by providing an assignment signal indicating which transmit channel circuit and which slot position the compressor should use for the information signal received,

thereby to assign for that request the RF channel and slot position to the information signal, wherein the central processing unit maintains a memory of which slots are so assigned for each of the plurality of RF channels and consults the memory upon receipt of the incoming connection request signal and then provides the assignment signal, that establishes the connection to a given slot position, wherein the central processing unit communicates through said transmitter a control signal representative of the assigned time slot and RF channel to the subscriber unit to which the communication request is addressed and wherein the system also selectively assigns the RF channel at which the transmit channel circuit operates within the system.

4. A digital telephone system as claimed in claim 3, wherein the slots in the transmit channel bit stream are combinable into system frames optionally of equal or varying slot length.